## REMARKS

This reply is submitted in response to the Office Action received on December 16, 2004. The amendments above and remarks that follow address points raised in the Office Action and thereby place this application in condition for allowance.

Based on the Examiner's assertion in Paragraph 11, claim 9 has been written to include all the features of its base and intervening claims, and is now allowable. New dependent claims 24-30, which parallel dependent claims 3-8 and 10, are dependent on claim 9.

### Claim Objections due to Informalities

Claims 1-20 stand rejected because of informalities cited by the Examiner. These informalities have been corrected in the amended claims.

### Claim Rejections under 35 U.S.C. § 112

Claims 1-10 and 20-23 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1, 4, 9, 20, 21, and 22 are amended along the lines suggested by the Examiner in the Office Action to overcome these rejections.

### Claim Rejections under 35 U.S.C. § 103

Claims 1-8, 10-11, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani et al, U.S. Patent No. 6,574,211, in view of Yeung et al., U.S. Patent No. 6,438,613, and Esmailzadeh, U.S. Patent No. 6,285,663.

Independent claim 1 is directed to digital data system comprising a plurality of nodes interconnected by at least one link, where the nodes are configured to communicate message packets on the link. The message packet is transmitted by a first node on the link and received by a second node on the link. The message packet is aligned in relation to a frame signal. A link level control symbol is interposed between symbols of a message packet as an additional symbol to signal an adjacent node on the link. At least one of the first and second nodes is configured to communicate the link level control symbol, such that the adjacent node receives

the additional symbol before completion of the message packet to effect a link level control of message flow on the link.

Padovani purports to teach a system for high rate packet data transmission, where mobile stations communicate with base stations and monitor control channels used during this communication. The control channels are used by the base stations to transmit, among other things, paging messages to a mobile station which tells that mobile station that the base station has a large amount of data to transmit. The mobile station then decides the rate at which the data can be transmitted to and from the base station to achieve improved utilization of the forward and reverse links of the system. The reverse link can support variable rates of data transmission. For example, a mobile station can always send data to a base station at the lowest data transmission rate, but in order to send data at a higher rate, permission must be granted from the base station (col. 29, lines 51-62).

Padovani does not teach or suggest the use of symbols interposed with a message packet to effect link level control of message flow as in claim 1. The control in Padovani is done through a separate communication prior to sending a message packet, not as a control symbol interposed within the message packet. In Padovani, the control is used to control the transmission rate by which packets are sent. This is achieved by requesting and receiving permission to send data at a higher transmission rate than the default rate before the packet is sent.

In addition, the control symbols of the claimed invention are not limited to those that regulate data transmission rates as suggested by the Examiner in Paragraph 5 of the Office Action. The control symbol contains information to regulate various aspects of the system, such as, but not limited to, buffer status of the nodes, acknowledgment of message receipt, and other information to regulate message flow, identify faulty messages, and enhance the speed, accuracy, and efficiency of the communication over the links (see specification, p. 5, lines 20-22; p. 13, lines 3-9). None of this additional functionality is taught by Padovani beyond the distinguished method for controlling data transmission rates.

The secondary reference of Yeung does not remedy the deficiencies of Padovani, specifically that Padovani does not the teach a control symbol that is interposed between symbols of a message packet as taught in the claimed invention. Yeung purports to teach a system for allowing packet data to be separated over multiple buses without impacting bus bandwidth or network performance.

Likewise, the secondary reference of Esmailzadeh does not remedy these same deficiencies of Padovani. Esmailzadeh purports to teach, among other things, a system that embeds one control symbol, for example, the power control information, within another control symbol, for example, the pilot symbol, to improve on the required channel capacity, the required transmission power, and the transmission channel interference (col. 2, lines 31-37). Nowhere does Esmailzadeh teach embedding a control symbol within a message packet. Embedding a control signal within another control signal, as suggested in Esmailzadeh, does not have the same benefits as interposing the control symbol between symbols of the message packet as taught in the application, such as allowing the control symbol within the message to be implemented immediately to effect the message itself.

Dependent claims 2-8 and 10 depend on independent claim 1, and contain all the features of claim 1. Hence, claims 2-8 and 10 are also patentable over the cited references.

Claim 11 is directed to a digital data system comprising a plurality of nodes interconnected by at least one link, where the nodes are configured to communicate message packets on the link between a first node on the link and a second node on the link. The message packet is aligned in relation to a frame signal. At least one of the first and second nodes is configured to transmit a link level THROTTLE control symbol. The link level THROTTLE control symbol is interposed between symbols of a message packet. The link level THROTTLE control symbol is effective to induce the other of the nodes receiving the THROTTLE control symbol to i) control message transmission of the other of said nodes receiving the THROTTLE control symbol, and ii) controlling the transmission to space out transmission of data messages to regulate flow in the link between the node receiving the THROTTLE control symbol and the node transmitting the THROTTLE control symbol.

The same arguments for claim 1 apply to claim 11 with equal force.

Dependent claim 15 depends on independent claim 11, and contains all the features of claim 11. Hence, claim 15 is also patentable over the cited references.

Claims 12-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani in view of Yeung and Esmailzadeh, and further in view of James et al, U.S. Patent No. 6,208,645.

Claims 12-14 depend on independent claim 11, and hence contain all the features of claim 11. James does not remedy the deficiencies of Padovani, Yeung, and Esmailzadeh, as explained above. James merely teaches a method of reducing cyclic redundancy check (CRC) hardware by time multiplexing CRC functions performed within a node. The scrubbers, which perform maintain in the system, can operate on IDLE symbol to control packet transmission rates, where the IDLE symbol transmission between data packets allows for the required time multiplexing of CRC hardware. James does not teach the deficiencies in Padovani, Yeung, and Esmailzadeh, namely James does not teach sending the IDLE symbol interposed between symbols of the message packet.

Claims 16-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani in view of Yeung and James.

Independent claim 16 is directed to a digital data system comprising a plurality of nodes interconnected by at least one link, where the nodes are configured to communicate message packets on the link between a first node and a second node. The message packet is aligned in relation to word boundaries. Adjacent ones of the first and second nodes are configured to communicate an IDLE state control symbol effective when transmitted by a transmitting node to reduce the rate of data flow in the link to a receiving node while maintaining communication between the receiving node and the transmitting node. On receipt of the IDLE state control symbol, the second node implements a control action designated by the control symbol, and suspends its message symbol byte count until further message packets are received. The IDLE state control symbol is interposed between symbols of the message packet.

The arguments above regarding the cited references apply with equal force to distinguish independent claim 16, and depend claims 17-19.

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani in view of Yeung and James, and further in view of Esmailzadeh.

Claim 20 is directed to the control symbol received from a receiving node being embedded in the message packet. In addition, claim 20 is dependent on independent claim 16, and contains all the features of claim 16. As explained in more detail above, these references in combination do not teach the feature of claim 20. Specifically, Esmailzadeh teaches a control symbol embedded in another control symbol, not a control symbol embedded in a message packet, as in claim 20.

Claims 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Keen, U.S. Patent No. 5,664,091, in view of Arimilli et al., U.S. Patent No. 6,671,712.

Independent claim 21 is directed to a digital data system comprising adjacent first and second nodes interconnected by a link of a link interconnect system. The nodes are configured to pass data messages therebetween over the link, where the data message includes at least one message packet. The nodes are also configured to pass at least one link-level control symbol for control of a link-level message mechanism. Both the first and second nodes are capable of sending a link level control symbol. In addition, at least one of the first and second nodes sends a link level control symbol over the link indicative of a message fragment to thereby prevent propagation of faulty messages in the link interconnect system.

Keen purports to teach a method for controlling the retransmission of data packets. The transmitting device send a request for status, RQST, to the receiving device regarding the status of a message signal (col. 5, lines 39-45). In response to the RQST, the receiving device issues a status response (col. 5, lines 65-66). The status information in Keen is sent in response to a request from the transmitting device, which is not required for passing the link level control symbol as in claim 21.

The secondary reference, Arimilli, does not remedy the deficiencies of Keen. Arimilli purports to teach a data processing system that includes a plurality of nodes, each with at least one agent, and data storage that is accessible to the agents within the nodes. The nodes are coupled by a non-hierarchical interconnect.

Dependent claims 22 and 23 depend on independent claim 21, and contain all the features of claim 21. Hence, claims 22 and 23 are also patentable over the cited references.

**Conclusion**

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

By_____

David J. Powsner
Registration No.: 31,868
NUTTER MCCLENNEN & FISH LLP
World Trade Center West
155 Seaport Boulevard
Boston, Massachusetts 02210-2604
(617) 439-2000
(617) 310-9000 (Fax)
Attorney for Applicant